Ohio Shale Development Community Impact Survey

Primary Findings From the 2013 Survey

http://www.ohio.edu/ce3/research/shale/shaleimpactsurvey.cfm
CE3 Established to study linkages between Energy, Economics and Environment
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U.S. expected to be largest producer of petroleum and natural gas hydrocarbons in 2013

Source: Energy Information Administration – October 4, 2013
Economic Potential Is Strong for Eastern and Southern Ohio

- Easy access to markets
- Well-developed logistics infrastructure
- Close proximity to all five primary states spanned by the Marcellus and Utica Shale formations
- Established supply chain - lowers costs and maximizes investment
- More than 54,000 miles of natural gas distribution pipeline
- Multi-modal and inter-modal networks
- Jobs and Capital tied to Mid-stream and Downstream activities
Potential Local Impacts

• Local Governments and Services bear the brunt
• Meeting Local Workforce Needs
• Large Water Requirement
  – Where will it come from?
  – Where and how will it be cleaned/disposed/released/reused?
• Emergency Response/ Preparedness
  – Is the volunteer squad prepared & trained in oil/gas well response?
• Site Reclamation
• Increased Road Traffic
  – Roadway Damage and Repair
  – Bridges, culverts, more
• Housing
  – Low income housing scarcity
  – Invest in housing stock and be left with stranded assets?
OHIO studying Ohio’s Shale

- Business Cluster/Supply Chains
- Surface and Groundwater Monitoring
- Housing
- Air Quality Monitoring
- Community Impacts
- Mapping

Eastern Ohio Shale Energy
The Ohio Shale Development Community Impact Survey

Research Goals:

• Initiate longitudinal shale development research
• Gather perceptions of shale activity impacts
• Establish baseline data to study changes over time

It is important to note that this is our initial survey findings. We anticipate further research in the future.
What the survey is and isn’t

• It is an opinion survey sent to local officials in Eastern Ohio.
• It provides a snapshot of the perceptions of shale activity on a broad range of issues.
• It cannot provide causal relationships.
Survey Deployment

• In July of 2013, the survey was sent to local officials in 17 Ohio counties.

• Belmont  • Carroll  • Columbiana

• Coshocton  • Guernsey  • Harrison

• Holmes  • Jefferson  • Mahoning

• Monroe  • Muskingum  • Noble

• Portage  • Stark  • Trumbull

• Tuscarawas  • Washington
Response Rate

Of the 540 surveys sent, 227 were returned for a response rate of 42.0%.

After removing 36 incomplete surveys (N=191), this is the response breakdown and the percentage each position accounts for:

- 66 Mayors and City Managers (34.6%)
- 16 County Commissioners (8.4%)
- 109 Township Trustees (57.1%)
Q1: Please think about the area you serve. Which of the following shale development activities are occurring in your area? Mark all that apply.

- Horizontal shale well drilling
- Injection well construction
- Supply yards or other staging areas
- Worker camps
- Refinery development
- No Activity

The 36 surveys removed were due to a lack of response to this question, which prevented analyses for these respondents.
Survey Analyses

Data are represented in three ways:

1) By the type of **shale development activity** reported to be taking place from Q1; respondents can be counted more than once depending on the number of activities they reported in their service area.
   - 51.8% of respondents report more than one activity in their area.

2) By respondent’s reported **local official** position (mayor/city manager, county commissioner, township trustee).

3) By **collapsing across all respondents**.
Response Coverage

• Respondents were asked to answer for the area they serve. This varied depending on the position of the local official.

• Some respondents are answering for the entire county, some for the township, others for only the city they oversee.
Map of Reported Shale Activity
Percent of respondents indicating the shale activity

0%  1-49.9%  50-100%

- Horizontal Shale Well Drilling
- Injection Well Construction
- Pipeline Construction
- Shale Supply Yards or Other Staging Area
- Worker Camps
- Refinery Development
- No Activity
<table>
<thead>
<tr>
<th>County</th>
<th>Total Respondents</th>
<th>Percent of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belmont</td>
<td>10</td>
<td>5.2%</td>
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<tr>
<td>Carroll</td>
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<td>5.2%</td>
</tr>
<tr>
<td>Columbiana</td>
<td>13</td>
<td>6.8%</td>
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<tr>
<td>Coshocton</td>
<td>13</td>
<td>6.8%</td>
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<tr>
<td>Guernsey</td>
<td>13</td>
<td>6.8%</td>
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<tr>
<td>Harrison</td>
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<tr>
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<tr>
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<tr>
<td>Washington</td>
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</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>191</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>
Overall Rating of Shale Activity Impact

Q42: In general, how would you describe the impact of shale development to date on the area you serve?

• According to the majority of local officials, the impact of shale activity has generally been positive.

• Across all local officials, 61.4% reported positive impacts, 25.7% reported that shale had resulted in no change to their service area, and only 7.8% indicated that the impact had been negative.
The impact of shale development was investigated to determine how population was influenced and the effect it has had on local housing and public safety.
Q: Please indicate the impact shale development has had on - Population

- Counties with shale activity of all kinds have seen increases in population.

- The percentage of respondents indicating a population increase due to shale development ranges from 42.9% (horizontal shale well drilling and injection well construction) to as high as 85.7% (refinery development).
Q: Please indicate the impact shale development has had on – Property Values/ Cost of Land

- Property and land costs have increased in counties with shale activity according to the majority of respondents, with a low of 54.8% attributing it to: (injection well construction) to a high of 90.5% attributing it to: (refinery development).

- More than a third (38.8%) of respondents in areas with no activity report that shale development has led to increases in property and land costs in their area.
Q: Please indicate the impact shale development has had on – Housing Rental Costs

- In counties with shale activity, nearly two-thirds or more of respondents indicate an increase in housing rental costs due to the impact of shale development.

- Respondents attribute refinery development (90.0%) followed closely by Supply Yards and Staging areas (86.2%) as the primary drivers behind increased housing rental costs.

- In areas reporting no activity, a considerable proportion of respondents (31.3%) report that shale development has increased housing rental costs.
Q’s: *Please indicate the impact shale development has had on – Issues of Public Safety*

- Across all respondents, only a small percentage indicated the following crimes have increased due to shale development: alcohol-related offenses (13.3%), drug-related offenses (12.4%), assaults (6.2%), property theft (11.2%), and prostitution (2.8%).
INFRASTRUCTURE AND ENVIRONMENT

The impact of shale development on local infrastructure and the environment was explored.
Q: Please indicate the impact shale development has had on — Traffic Volume

- In counties with ongoing shale development activities, the majority of respondents across activities, ranging from 75.6% (injection well construction) to 100% (refinery development), indicate shale development has increased traffic volume.

- Nearly half (44.9%) of respondents in counties with no shale development activities reported that shale development has increased traffic volume.
Q: Please indicate the impact shale development has had on – The Need for Public Road Maintenance

- Among areas with ongoing shale development activities, 61.0% (injection well construction) to 95.2% (refinery development) of respondents indicate a need for public road maintenance.

- In counties without ongoing shale development activities, over a third of respondents (36.7%) report a need for public road maintenance due to the impact of shale development.
Q: Please indicate the impact shale development has had on Bridge Maintenance and Inspection

- In areas with ongoing shale development, more than half of respondents across all activities report shale development has increased the need for bridge maintenance and inspection.

- Nearly a quarter (24.5%) of respondents in counties with no shale activity indicated that shale development has increased the need for bridge maintenance and inspection.
RUMAs

Road Use Maintenance Agreements (RUMA) are a contractual agreement between a shale development company and a local governing body stating that the company will take on maintenance, repair, and potential upgrading of specified bridges and roadways.

• When asked, more than half (61.4%) of county commissioners and township trustees indicated that RUMA agreements had been signed in their service area.

Q: Please indicate the impact shale development has had on – Noise Pollution

- Reports of increased noise pollution were highest in counties with refinery development, with 71.4% of respondents reporting an increase.

- In counties with no reported activity, 14.3% of respondents indicated that shale development has increased noise pollution.
**Q: Please indicate the impact shale development has had on - Runoff, Erosion, Light pollution, Water Demand, Water Disposal**

- Overall, reports of environmental harm have been limited. Across all respondents, (12.8%) report an increase in storm water runoff. A similar percentage (14.4%) indicate an increased in erosion. A slightly higher amount (17.8%) indicate that light pollution has increased, with the majority of these reports coming from respondents in areas with ongoing shale well drilling, pipeline construction, and shale supply yards or other shipping areas.

- Respondents also report that shale development has increased the demand for water (48.1%) and water disposal (25.7%) to a considerable degree.
The impact of shale development on local employment and existing businesses was investigated.
Q: Please indicate the impact shale development has had on - Workforce Migration

- Workforce migration increased due to shale development in areas with and without reported shale activity.

- An increase of workforce migration due to shale development was reported by all (100%) of respondents in areas with refinery development, and nearly all respondents in counties with worker camps (92.9%) and supply yards/staging areas (90.8%).

- Over a quarter (29.2%) of respondents with no activity in their area reported an increase of workforce migration related to shale development.
Q: Please indicate the impact shale development has had on – Local Employment

- The majority of respondents (57.5%) report an increase in the employment of local residents due to shale activity.
- None of the respondents reported a decrease in employment.
Q: Please indicate the impact shale development has had on – Restaurant Activity

- In areas with reported shale activity, the range of respondents who indicated an increase in restaurant activity related to shale development was 70.8% (horizontal shale well drilling) to 90.5% (refinery development).

- One fifth (20.4%) of respondents in areas with no activity report an increase in restaurant activity due to the impact of shale development.
Q: Please indicate the impact shale development has had on – Other Retail Activity

- Among areas with reported shale activity, the percentage of respondents indicating an increase in other retail activities ranged from 65.7% (horizontal shale well drilling) to 90.5% (refinery development).

- In areas with no activity, nearly a fifth (18.4%) of respondents reported an increase in other retail activity due to shale development.
Q: Please indicate the impact shale development has had on – Hotel Occupancy

- In counties with horizontal shale well drilling, 51.5% of respondents report an increase in hotel occupancy due to the impact of shale development. In counties with injection well construction, increases in hotel occupancy was reported by 71.4% of respondents.

- In counties with no activity, 10.6% of respondents indicate an increase in hotel occupancy due to shale development.
Local officials – city managers and mayors, county commissioners and township trustees – reported that the influence of shale development on local economic growth was primarily positive.
Q: Please indicate the impact shale development has had on – Local Tax Revenues

• Across all local officials, only 35.6% indicated that local tax revenues had increased due to the impact of shale activity. However, considerable differences were seen between the types of local officials.

• Nearly half (43.1%) of city managers and mayors reported an increase in tax revenue. The majority (87.5%) of county commissioners reported an increase in tax revenues, while only 22.2% of township trustees indicated shale development had increased tax revenues.

• Local tax revenue is the only economic survey item where major differences were seen among the local official positions.
Q: Please indicate the impact shale development has had on – the Development of Businesses Serving the Shale Industry

- Collapsing across respondent positions, the majority of respondents (51.1%) indicated that shale development had led to an increase in the development of businesses that serve the shale industry.

- The remainder of respondents reported that either no change had occurred in the development of businesses serving the shale industry or that they did not know.
Q: Please indicate the impact shale development has had on – the Demand for Commercial and Industrial Space

- Nearly half of all respondents (43.9%) reported that the demand for commercial and industrial space has increased due to the impact of shale development activities.

- A similar proportion of respondents (49.4%) reported that the demand for commercial and industrial space had not changed.

- Among the different shale activities, the range of respondents indicating an increase in the need for commercial space fell between 85.7% (refinery development) and 57.1% (injection well construction).
Q: Please indicate the impact shale development has had on – Hotel Construction

- More than a quarter (27.5%) of all respondents reported that there has been an increase in hotel construction due to the impact of shale development.

- The majority of respondents (65.2%) indicated that no change has occurred in hotel construction.
Summary

• The impacts of shale development are being felt across the region but are particularly acute in counties where respondents feel refineries or horizontal well drilling is taking place.

• Shale development in Ohio is generally seen as a positive force by local elected officials in the shale-impacted region of the state with 87.1% saying that it has been either a positive or neutral influence and only 7.8% saying that it is a negative.

• Infrastructure impacts are being felt throughout the region, particularly where refineries are being developed and where horizontal drilling is taking place. But really – everywhere including counties with no activity.

• Some of the largest impacts are being reported around increases in traffic volumes and the need for public road maintenance.

• There is very little reported impact on public safety.
Additional

- Economic/business impacts are largely positive. Local business activity (restaurant sales, other retail activity) is strong.

- Commissioners especially are noting an increase in local tax revenues.

- While there is noted workforce migration into shale counties, local employment has also prospered.

- Shale development has resulted in increases in property and land values as well as housing rental costs.

- The influence of shale development on local economic growth is generally positive with an increase seen in the number of businesses serving the shale industry and growth in industrial and commercial space in the region.

- Environmental impacts are not noted yet. Except for increased water demand.
Looking Ahead

• Well drilling and fractionation facilities
• Water demands
• Population
• Sense of permanence
• The impact of relatively short duration sales taxes vs long duration of local property taxes
• Higher-value for the region such as jobs, business and capital formation, and wealth management
• Midstream and Downstream opportunities
Finally,

This opinion survey is not meant to draw causal relationships. We don’t know why respondents replied the way they did.

This is a baseline analysis and a snapshot in time. We look forward to conducting similar studies in the future and tracking how attitudes and opinions may vary as Ohio’s shale play matures.

Overall the response rate to the survey was strong and geographically dispersed.

Thank you to all of those elected officials in the study area who took time to complete the survey.
Thank You!

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